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Process for Producing a Transport and Assembly Aid for  
Rubber Form Seals and a Transport and Assembly Aid

The invention concerns a process for producing a transport and assembly aid for rubber form seals.

In DE-A 198 29 833, an assembly aid for attaching an elastic ring seal to a seal-carrier component on an attachment edge around a component opening is described, whereby the ring seal has an adhesive surface around at least part of it for the attachment to the attachment edge, and another component can be attached to form a seal by holding the attached ring seal in between. The assembly aid has a base plate with a raised part, whereby the contour of the bottom of the raised part corresponds to the cut-out shape of the component opening. The edge contour on the base plate around the bottom contour of the raised part represents a negative image of the application surface of the attachment edge on the component opening.

With this assembly aid, a ring seal can be centered with a surrounding adhesive surface and attached in a precise position around the component opening. An assembly aid of this kind is not suitable for use with rubber form seals.

Pure rubber form seals are unstable in shape. This means that the rubber form seals are almost unsuitable for automatic production and assembly processes. Moreover, the rubber form seals must be oriented and repositioned during all control and transport processes. This process is repeated one last time when the seal is inserted into a groove at the site of the final customer or the system supplier.

The object of the invention is to stabilize rubber form seals for transport and assembly without this involving a significant cost increase. Through this step, an essentially fully automatic production, transport, and assembly is realized.

The object is achieved on the one hand by a process for producing a transport and assembly aid for rubber form seals, in which, in the area of an injection tool, a carrier frame is arranged, which

is injected at least partially onto or around the rubber form seal, during its creation, whereby the carrier frame is removed from the rubber form seal only during the assembly process.

Advantageous further developments of the process according the invention can be seen in the associated dependent claims.

On the other had, the object is also achieved by a transport and assembly aid for rubber form seals consisting of a carrier frame adapted to the contour of the seal, which is at least partially connected to the edge areas of the seal. Advantageous further developments of the transport and assembly according to the invention aid can be seen in associated dependent claims.

The basic idea of the invention is to hang the rubber form seal on a carrier frame, which then remains on the rubber form seal throughout the entire course of production, testing, and transportation. There is also an essential advantage in the assembly. Here, the frame is then released from the rubber form seal. According to the embodiment of the carrier frame, it can be reused or else consist of economical materials, such as wire, plastic, cardboard, or similiar, and be designed as a disposable part. The carrier frame can, locally at several points, lie against the rubber form seal or surround it. In the latter case, a subsequent deburring of the rubber form seal can be omitted, since it can be sealed onto the carrier frame in the injection tool. A form-separation burr thus cannot arise.

The object of the invention is shown by means of an embodiment example in the drawings, and it will be described as follows. They show:

Figure 1        a principal sketch of a closed carrier frame;

Figure 2        a partial representation of a rubber form seal constructed with an I-shaped cross-section;

Figure 3        a combination of carrier frame and rubber form seal;

Figure 4 indicated connection areas of the carrier frame with the rubber form seal.

Figure 1 shows a stable carrier frame 1, in this example, consisting of plastic.

Figure 2 shows a rubber form seal 2, unstable in shape, with an I-shaped cross-section.

In Figure 3, the state is shown that is achieved after it leaves the injection machine. The rubber form seal 2, the carrier frame 1, and an individual connection tab 3 can be recognized. In this state, the rubber form seal, which is now stable in shape, can be handled in the rest of the production and transport process without problems. An edge area can be recognized, against which the carrier frame 1 lies. According to the embodiment of the rubber form seal 2, the carrier frame 1 can be provided on the inside or the outside edge areas 4 .

In Figure 4, several of the connection tabs 3 indicated in Figure 3 are represented.

For the assembly process, the carrier frame 1 is snapped off by means of the connection tabs 3 that form the predetermined break points, and it can be reused as needed.